

MENU

SEARCH

INDEX

1/1



## JAPANESE PATENT OFFICE

## PATENT ABSTRACTS OF JAPAN

(11)Publication number: 11076480

(43)Date of publication of application: 23.03.1999

(51)Int.CI.

A63B 53/10  
 B29C 70/16  
 B32B 1/08  
 B32B 5/00  
 B32B 5/12  
 B32B 5/26  
 // B29L 31:52

(21)Application number: 09242340

(71)Applicant:

SUMITOMO RUBBER IND LTD

(22)Date of filing: 08.09.1997

(72)Inventor:

YOSHIDA MAKOTO  
ONUKI MASAHIKE

## (54) GOLF CLUB SHAFT AND MANUFACTURE THEREOF

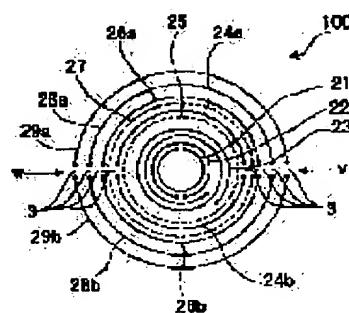
(57)Abstract:

BEST AVAILABLE COPY

**PROBLEM TO BE SOLVED:** To improve bending strength of a golf club shaft in which the elastic main shaft is different from the geometrical main shaft.

**SOLUTION:** This golf club shaft is so constituted that two or more layers of reverse inclined two-split layers which are split into a first semicircle part (24a, 26a, 28a, 29a) positioned in the region of  $0^\circ$

$\theta < 180^\circ$  in the circumferential direction of the shaft and a second semicircle part (24b, 26b, 28b, 29b) positioned in the region of  $180^\circ < \theta < 360^\circ$  are provided to make the elastic main shaft of the shaft different from the geometrical main shaft. In this case, hoop layers 25, 27 where the reinforced fibers are oriented substantially orthogonal to the axial direction of the shaft are stacked to be superposed on a



boundary part 3 between the first semicircle part and  
the second semicircle part of the reverse inclined  
two-split layer.

---

**LEGAL STATUS**

[Date of request for examination]

[Date of sending the examiner's decision of  
rejection]

[Kind of final disposal of application other  
than the examiner's decision of rejection or  
application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision  
of rejection]

[Date of requesting appeal against examiner's  
decision of rejection]

[Date of extinction of right]

---

Copyright (C); 1998 Japanese Patent Office

---

**MENU**    **SEARCH**    **INDEX**

**BEST AVAILABLE COPY**